

28 September 2003

Dear Federal Communications Commission,

As an FCC Commission you are constantly faced with many challenges: technical, economic, and political. A most difficult balancing act. Were I in your shoes my number one priority would be the technical considerations, as all communications that your agency governs are electrical in nature, and it is difficult change the basic laws of physics and electricity.

As an Electrical Engineer (with BS and MS degrees from USC), and radio communicator licensed by your agency in 1947, I have compelling concerns about the Broadband over Power Line (BPL) initiative. My concerns are the serious negative effect on High Frequency (HF) and Very High Frequency (VHF) bands that will (is being) created.

Yes, wide-band digital signals may be transmitted over power lines, but the problem is that power lines operate in an open and unshielded environment. The wideband signals of BPL, because they are being transmitted via the power line unshielded environment where power lines become antennas and will radiate the BPL energy strongly throughout the HF and VHF spectrum, and potentially interfere with all FCC licensed wireless services licensed to use those frequency bands, including commercial services, broadcast and television, aviation communications, law enforcement, and federal government and military communications in the HF and VHF frequency bands.

This is in distinct contrast to cable television systems that operate in a totally closed and shielded environment. They can transmit broadband signals, either or both analog and digital signals, without harmful interference radiation because of their closed and shielded systems. The shielding is bilateral – their shielded coaxial system both keeps their signals from being radiated, and keeps wireless signals external to their system from entering and interfering with their signals. Such a shielded system makes good technical sense!

In that context, how about the affects of FCC licensed wireless services on BPL. Shielding, or lack thereof, is bilateral. That means not only that BPL will radiate harmful interference to other FCC licensed wireless services, but also those same FCC licensed wireless services will create harmful interference to BPL.

I think that will be called FCC licensed “fratricide”!! The lawyers will love it.

Is there a solution? Sure, retrofit all external power lines and every home in the nation so that all our AC power is delivered via a closed and shielded system, including cords to all appliances and extension cords. Is that practical? Not in one’s wildest imagination!!

Please don’t let the politics try to repeal the laws of physics – it’s a losing battle!

Respectfully,

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